

REMARKS

Claims 2-18 are pending in this patent application. By this amendment, claims 9, 10, 11, 17, and 18 have been canceled. (Claim 1 was canceled by previous amendment). Further by this amendment, claims 5, 6, 7, 8, 15, and 16 have been amended, and claims 19-24 have been added. Reconsideration of this patent application, as amended, is respectfully requested.

First 35 U.S.C. § 103 Rejection

Claims 2, 5-6, 8-12, 15, and 17-18 were rejected under 35 U.S.C. § 103 as being unpatentable over Gillies et al. (U.S. Patent No. 6,272,370). Claims 9, 10, 11, 17, and 18 have been canceled. Claims 5, 6, 8, and 15 have been amended to more clearly define the invention. Reconsideration of claims 2, 5, 6, 8, 12, and 15, as amended, is respectfully requested.

Amended claim 5 recites a drill bit bearing a plurality of marker rings on its shaft, and a drive unit operable to rotate the drill bit about its axis. Amended claim 8 recites a reamer bearing a plurality of marker rings on its shaft, and a drive unit operable to rotate the reamer about its axis, where the reamer is configured to cut a patient's tissue during rotation of the reamer about the axis. The drill bit and the reamer are both cutting devices, and the invention involves providing a plurality of marker rings on the shafts of these cutting devices.

Presumably in an attempt to arrive the Applicants' invention, the Office Action (at page 3, lines 6-8) states that Gillies' tool "is inherently a cutting tool as it penetrates tissue to deliver drug substance to a desired target location (see

Fig. 1).” However, Gillies’ microcatheter 1 is not disclosed as possessing any cutting structure or devices, but rather is generally a tube with a magnetic tip 5. (See Gillies’ Figs. 2, 3, 4a, and 4b.) This would appear consistent with the discussion regarding the use of Gillies’ microcatheter 1 as being a device that is advanced into the cerebrovasculature¹ during use. (See Gillies at column 25, lines 19-21.) In other words, Gillies catheter appears to reach its desired target location by being weaved through the blood vessels of the brain, not by cutting its way to the target location with some type of cutting structure or device. Thus, Gillies’ tool is not inherently a cutting tool.

Since the proposed modification of Gillies does not arrive at a device which includes a cutting tool, much less a drill bit or a reamer, the proposed modification of Gillies does not establish a prima facie case of obviousness under 35 U.S.C. § 103 with regard to the invention of amended claims 5 or 8.

To put Applicants’ invention into context, proper manipulation of drill bits and reaming tools has previously involved the provision of an appropriately visible marker (which can be used to define location and orientation information) on the drive unit. Such markers are commonly in the form of an array of reflective spheres in a pre-determined arrangement on the drive unit. Then, the location of the cutting tip of the drill bit or reamer can be derived from position data for the drive unit. However, this can involve some inaccuracy when the drill bit is not located accurately in the drive unit. Inaccuracy can also arise when the drill bit is subjected to bending forces when in use. These inaccuracies are

¹ The term “cerebrovasculature” means “pertaining to the vascular system and blood supply of the brain.”

reduced in the present invention by providing visible markers directly on the drill bit or reamer itself.

Each of claims 2 and 6 depends directly from amended claim 5. As a result, each of claims 2 and 6 is allowable for, at least, the reasons hereinbefore discussed with regard to amended claim 5.

Second 35 U.S.C. § 103 Rejection

Claims 3, 4, 7, 13, 14, and 16 were rejected under 35 U.S.C. § 103 as being unpatentable over Gillies et al. (U.S. Patent No. 6,272,370) in view of Ben-Haim (U.S. Patent No. 6,203,493). Claim 7 has been amended to more clearly define the invention. Reconsideration of claims 3, 4, 7, 13, 14, and 16, as amended, is respectfully requested.

Each of claims 3, 4, and 7 depends directly or indirectly from amended claim 5. As a result, each of claims 3, 4, and 7 is allowable for, at least, the reasons hereinbefore discussed with regard to amended claim 5.

Each of claims 13, 14, and 16 depends directly or indirectly from amended claim 8. As a result, each of claims 13, 14, and 16 is allowable for, at least, the reasons hereinbefore discussed with regard to amended claim 8.

Newly Added Claims 19-24

Claims 19-24 have been added. These claims recite novel and non-obvious limitations. In particular, the discussion relating to the patentability of amended claims 5 and 8 is relevant to the patentability of new claim 19. Thus,

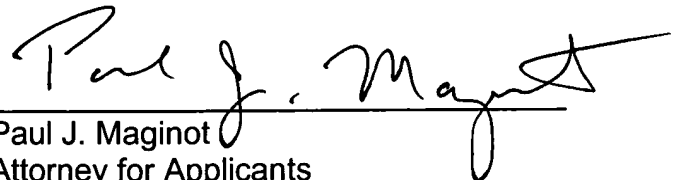
new claim 19 is believed to be allowable. Moreover, each of claims 20-24 depends directly or indirectly from presumably allowable claim 19. Thus, each of claims 20-24 is allowable over the cited art.

Conclusion

In view of the foregoing amendments and remarks, it is submitted that this application is in condition for allowance. Action to that end is hereby solicited. It is respectfully submitted that, if necessary to effect a timely response, this paper be considered as a Petition for an Extension of Time sufficient to effect a timely response, and any deficiency in fees be charged, or any overpayment in fees be credited, to our Deposit Account No. 13-0014.

Respectfully submitted,

MAGINOT, MOORE & BECK

A handwritten signature in black ink, appearing to read "Paul J. Maginot", is written over a horizontal line.

Paul J. Maginot
Attorney for Applicants
Registration No. 34,984

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Maginot, Moore & Beck
Chase Tower
111 Monument Circle, Suite 3250
Indianapolis, Indiana 46204-5109